IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:)	Group Art Unit: **Not Yet Assigned**
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Minoru Tsuji, et al.)	Examiner: **Not Yet Assigned**
)	
Application No. **Not Yet Assigned**)	
)	
Filed: **March 29, 2004**)	
)	
For: "DIGITAL SIGNAL PROCESSING)	
METHOD AND APPARATUS THEREOF,)	
CONTROL DATA GENERATION METHOD)	
AND APPARATUS THEREOF, AND)	
PROGRAM RECORDING MEDIUM")	

Mail Stop Patent Application
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRELIMINARY AMENDMENT PURSUANT TO 1.53(b)

Dear Sir:

The above-identified application is a divisional of Application No. 09/381,880 filed September 24, 1999. Please amend the instant application as follows.

IN THE SPECIFICATION:

Please add the following paragraphs on page 1 after the title:

CROSS REFERENCE TO RELATED APPLICATIONS

This is a divisional of co-pending U.S. Application No. 09/381,880, filed on September 24, 1999, which is incorporated herein by reference to the extent permitted by law.

Please amend the paragraph beginning on page 1, line 5 as follows:

The present invention relates to a digital signal processing method and an apparatus thereof for synchronously reproducing a performance tone signal output from a sound source

storing a plurality of instrument information items, synchronized with a ~~another~~ digital signal

other than the performance tone signal, a control data generation method and an apparatus

thereof for generating control data which enables the synchronous reproduction, and a program

recording medium for recording a program which enables the synchronous reproduction.

Please amend the paragraph beginning on page 2, line 2 as follows:

Also, a standard MIDI file (SMF) is known as the unified standard for maintaining

compatibility between different sequencers or different kinds of sequencer software. The SMF is

composed of data units called "chunks". The "chunks" define data pieces called a header chunk

and a track chunk. The header chunk is set at the top of a SMF file and describes basic

information concerning the data in the file. The track chunk is composed of time information

(Delta-Time) and events. The event represents an action, event or the like which will change any

of the items of the data file. Events of MIDI file data formatted in the SMF format are roughly

classified into three types of events, i.e., MIDI events, SysEx events (system exclusive events),

and Meta events.

Please amend the paragraph beginning on page 2, line 12 as follows:

MIDI events directly express performance data. SysEx events mainly express system

exclusive messages for MIDI. System exclusive messages are used to exchange information

peculiar to a specific instrument and to transmit special non-musical information, event

information, and the like. Meta events express additive information such as information

indicating tempo, time, and the like concerning the entirety ~~entire~~ of a performance, information

including words of a song used by sequencer software, or copyright information. Every Meta

event begins with 0xFF which is followed by a byte representing the event type, and the data

length and data itself further follow. The MIDI performance program is designed so as to ignore

those Meta events that cannot be recognized by the program itself.

Please amend the paragraph beginning on page 3, line 6 as follows:

In general, music reproduction using the MIDI standard adopts a system in which various

signals and tones peculiar to instruments are modeled, and a sound source which stores the data

of the modeling is controlled by various parameters ~~parameter~~. Therefore, it is difficult to

express those sounds that are difficult to model or that have not yet been studied sufficiently,

such as human ~~voices, natural~~ voices and natural sounds.

Please amend the paragraph beginning on page 3, line 11 as follows:

Consequently, reproduction of music according to the MIDI standard is limited at most to

performance of ~~music~~ musical instruments ~~or so~~ and the like, but cannot cover singing voices

and the like.

Please amend the paragraph beginning on page 6, line 10 as follows:

Also, the digital signal processing apparatus according to the present invention

comprises: first decoding means for ~~encoding~~ decoding control data previously encoded and

described in interface data for an instrumental performance, which contains at least performance

data for causing a sound source storing plural pieces of instrumental tone information to generate

a performance tone of an instrument; and second decoding means for decoding a digital signal

other than a signal of the performance tone, in correspondence with reproduction timing

information of the performance data, on the basis of the control data decoded by the first

decoding means.

Please amend the paragraph beginning on page 9, line 14 as follows:

In the following, embodiments of the present invention will be explained with reference to drawings. ~~At first~~ First, explanation will be ~~made of~~ given for an embodiment of a digital signal processing method and apparatus thereof applied to a digital signal processing apparatus which synchronously ~~reproducing~~ reproduces performance tone signals based on MIDI signals according to Musical Instrument Digital Interface (MIDI) widely used as an interface for controlling a performance of musical instruments, synchronized with digital signals other than the performance tone signals.

Please amend the paragraph beginning on page 9, last line as follows:

More specifically, the apparatus realizes the digital signal processing method according to the present invention with which performance tone signals based on interface data for performing an instrument, ~~containing~~ including at least performance data for generating a tone of an instrument, and ~~other~~ digital ~~signal~~ signals other than the tone signals are reproduced by a MIDI sound source storing a plurality of instrumental tone information items on the basis of control data previously encoded and described in the interface data.

Please amend the paragraph beginning on page 10, line 7 as follows:

In particular, the digital signal processing apparatus ~~is supposed to~~ may use vocal audio signals based on human voices, as an example of the digital signals other than the performance tone signals, in the following explanation. This apparatus can be considered ~~as the same as~~ similarly to an apparatus called a sequencer. The objects to be synchronized with the performance tone signals, however, are not only audio signals but also may be image signals, text signals, and the like.

Please amend the paragraph beginning on page 11, line 1 as follows:

In the digital signal processing apparatus 10, the SMF data is input to a data decoder section 11. The data decoder section 11 extracts audio control data inserted in the SMF data by the encoder side ~~described later~~ discussed below, and supplies the data to an audio decoder section 12. The data decoder section 11 extracts MIDI data in the form of parameters from the SMF data and transforms the MIDI data into time-based ~~MDI~~ MIDI signals.

Please amend the paragraph beginning on page 15, last line as follows:

Accordingly, the length of the bit string indicating the control-amount/control-method in the control data shown in ~~the~~ Table 1 becomes less redundant when the bit length is defined for every ~~types~~ type of ~~controls~~ control (or every control event ID) than when a fixed equal bit length is given to ~~each of all controls~~ every control. In addition, information may be subjected to variable-length encoding in correspondence with the generation probability of the control-amount/control-method of each control.

Please amend the paragraph beginning on page 16, line 12 as follows:

The 1 byte [FF] in the left end expresses a Meta event, and the next 1 byte expresses information or the like concerning the ~~entire~~ entirety of a performance, such as the tempo, time, key, and the like of the performance, in ~~the~~ form of ~~a~~ an [Event Type]. Further, the next [Data Length] expresses the length of the Meta event in units of bytes. The other remaining bytes are the contents of the Meta event.

Please amend the paragraph beginning on page 16, line 17 as follows:

In this Meta event, audio control data for controlling an actual audio signal is described in a sequencer specific event which has [7F] as the [Event Type] described above, as shown in Fig.

3. The manufacturer of the sequencer may ~~writes~~ <u>write</u> original data in this sequencer specific

event.

Please amend the paragraph beginning on page 19, line 7 as follows:

Note that the flowchart shows the case where only one piece of control object data exists.

If no control object data exist, the procedure goes to ~~the~~ step S13. To enable processing of plural

pieces of control object data, the processing flow should be arranged so as to make control on

any one of the pieces of control object data if <u>it</u> exists.

Please amend the paragraph beginning on page 21, last line as follows:

The audio decoder section 12 receives audio control data decoded by the data decoder

section 11, so an audio output is generated in accordance with the data. If the decoding period in

the audio decoder section is sufficiently short, the performance tones and the audio output create

synchronized reproduced sounds because the audio control data is decoded ~~form~~ <u>from</u> the Meta

event in the SMF data.

Please amend the paragraph beginning on page 28, line 2 as follows:

~~At first~~ <u>First</u>, the ~~audio~~ <u>digital</u> signal processing apparatus 10 takes in the SMF data into

the data decoder section 11, and then reads an event in the step S41. Further, in the step S42,

whether or not the one byte indicating the event type of the MIDI data is [FF] is determined. If

this byte indicates [FF], the event is a Meta event, so the procedure goes to the step S43.

Please amend the paragraph beginning on page 31, line 16 as follows:

~~At first~~ <u>First</u>, the ~~audio~~ <u>digital</u> signal processing apparatus 10 takes in the SMF data into

the data decoder section 11, and then reads an event in the step S41. Further, in the step S42,

whether or not the one byte indicating the event type of the MIDI data is [FF] is determined. If

this byte indicates [FF], the event is a Meta event, so the procedure goes to the step S43.